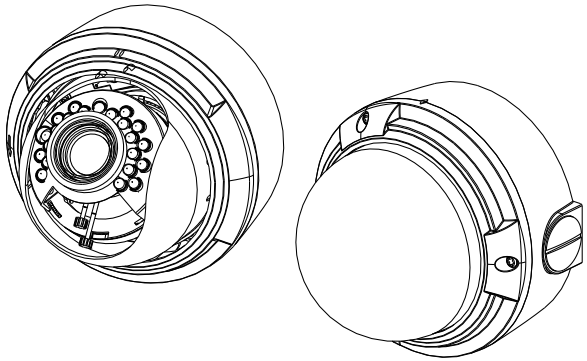
INSTRUCTION MANUAL

DIGIMERGE

Ultra Resolution
Day & Night IR Dome Camera



Vandal Model: DPV24DL

Indoor Model: DPD24DL

Please read this manual thoroughly before use and keep it handy for future reference.

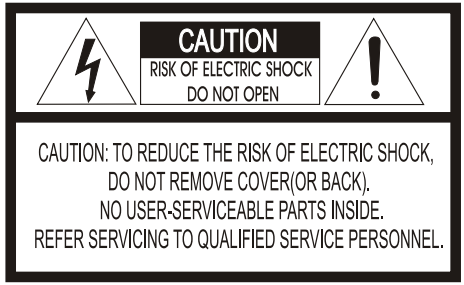
Ultra Resolution
Day & Night IR Dome Camera

P/N 01.BMS.11.0071401
V1.1

WARNINGS AND CAUTIONS:

TO REDUCE THE RISK OF FIRE OR ELECTRIC SHOCK, DO NOT EXPOSE THIS PRODUCT TO RAIN OR MOISTURE. DO NOT INSERT ANY METALLIC OBJECTS THROUGH THE VENTILATION GRILLS OR OTHER OPENINGS ON THE EQUIPMENT.

CAUTION:



EXPLANATION OF GRAPHICAL SYMBOLS

The lightning flash with arrowhead symbol, within an equilateral triangle, is intended to alert the user to the presence of uninsulated "dangerous voltage" within the product's enclosure that may be of sufficient magnitude to constitute a risk of electric shock to persons.

The exclamation point within an equilateral triangle is intended to alert the user to the presence of important operating and maintenance (servicing) instructions in the literature accompanying the product.

PRECAUTIONS

Safety ----------

Should any liquid or solid object fall into the cabinet, unplug the unit and have it checked by the qualified personnel before operating it any further.

Unplug the unit from the wall oulet if it is not going to be used for several days or more. To disconnect the cord, pull it out by the plug. Never pull the cord itself.

Allow adequate air circulation to prevent internal heat build-up. Do not place the unit on surfaces (rugs, blankets, etc.) or near materials(curtains, draperies) that may block the ventilation holes.

Height and vertical linearity controls located at the rear panel are for special adjustments by qualified personnel only.

Installation ----------

Do not install the unit in an extremely hot or humid place or in a place subject to excessive dust, mechanical vibration.

The unit is not designed to be waterproof. Exposure to rain or water may damage the unit.

Cleaning ----------

Clean the unit with a slightly damp soft cloth. Use a mild household detergent. Never use strong solvents such as thinner or benzine as they might damage the finish of the unit.

Retain the original carton and packing materials for safe transport of this unit in the future.

FCC COMPLIANCE STATEMENT

FCC INFORMATION : THIS EQUIPMENT HAS BEEN TESTED AND FOUND TO COMPLY WITH THE LIMITS FOR A CLASS A DIGITAL DEVICE, PURSUANT TO PART 15 OF THE FCC RULES. THESE LIMITS ARE DESIGNED TO PROVIDE REASONABLE PROTECTION AGAINST HARMFUL INTERFERENCE WHEN THE EQUIPMENT IS OPERATED IN A COMMERCIAL ENVIRONMENT. THIS EQUIPMENT GENERATES, USES, AND CAN RADIATE RADIO FREQUENCY ENERGY AND IF NOT INSTALLED AND USED IN ACCORDANCE WITH THE INSTRUCTION MANUAL, MAY CAUSE HARMFUL INTERFERENCE TO RADIO COMMUNICATIONS. OPERATION OF THIS EQUIPMENT IN A RESIDENTIAL AREA IS LIKELY TO CAUSE HARMFUL INTERFERENCE IN WHICH CASE THE USER WILL BE REQUIRED TO CORRECT THE INTERFERENCE AT HIS OWN EXPENSE.

CAUTION : CHANGES OR MODIFICATIONS NOT EXPRESSLY APPROVED BY THE PARTY RESPONSIBLE FOR COMPLIANCE COULD VOID THE USER'S AUTHORITY TO OPERATE THE EQUIPMENT.

THIS CLASS A DIGITAL APPARATUS COMPLIES WITH CANADIAN ICES-003.

CET APPAREIL NUMÉRIQUE DE LA CLASSE A EST CONFORME À LA NORME NMB-003 DU CANADA.

CE COMPLIANCE STATEMENT

WARNING

This is a Class A product. In a domestic environment this product may cause radio interference in which case the user may be required to take adequate measures.

IMPORTANT SAFEGUARDS

1. READ AND RETAIN INSTRUCTIONS
Read the instruction manual before operating the equipment. Retain the manual for future reference.

2. CLEANING
Turn the unit off and unplug from the power outlet before cleaning. Use a damp cloth for cleaning. Do not use harsh cleansers or aerosol cleaners.

3. ATTACHMENTS
Do not use attachments unless recommended by manufactured as they may affect the functionality of the unit and result in the risk of fire, electric shock or injury.

4. MOISTURE
Do not use equipment near water or other liquids.

5. ACCESSORIES
Equipment should be installed in a safe, stable location. Any wall or shelf mounting accessory equipment should be installed using the manufacture's Instructions. Care should be used when moving heavy equipment. Quick stops, excessive force, and uneven surfaces may cause the equipment to fall causing serious injury to persons and objects.

6. VENTILATION
Openings in the equipment, if any, are provided for ventilation to ensure reliable operation of the unit and to protect if from overheating. These openings must not be blocked or covered

7. POWER SOURCES
The equipment should be operated only from the type of power source indicated on the marking label. If you are not sure of the type of power supplied at the installation location, contact your dealer. For equipment designed to operate from battery power, refer to the operating instructions.

8. GROUNDING OR POLARIZATION
Equipment that is powered through a polarized plug (a plug with one blade wider than the other) will fit into the power outlet only one way. This is a safety feature. If you are unable to insert the plug fully into the outlet, try reversing the plug. Do not defeat the safety purpose of the polarized plug.

Alternate Warning: If the equipment is powered through a three-way grounding-type plug, a plug having a third (grounding) pin, the plug will only fit into a grounding-type power outlet. This is a safety feature. Do not defeat the safety purpose of the grounding-type plug. If your outlet does not have the grounding plug receptacle, contact your local electrician.

9. CORD AND CABLE PROTECTION
Route power cords and cables in a manner to protect them from damage by being walked on or pinched by items places upon or against them.

10. LIGHTNING
For protection of the equipment during a lightning storm or when it is left unattended and unused for long periods of time, unplug the unit from the wall outlet. Disconnect any antennas or cable systems that may be connected to the equipment. This will prevent damage to the equipment due to Lightning or power-line surges.

11. OVERLOADING
Do not overload wall outlets and extension cords as this can result in a risk of fire or electric shock.

12. SERVICING
Do not attempt to service the video monitor or equipment yourself as opening or removing covers may expose you to dangerous voltage or other hazards. Refer all servicing to qualified service personnel.

13. DAMAGE REQUIRING SERVICE
Unplug the equipment from the wall outlet and refer servicing to qualified service personnel under the Following conditions:

A. When the power supply cord or the plug has been damaged.
B. If liquid has spilled or objects have fallen into the Unit.
C. If the equipment has been exposed to water or other liquids.
D. If the equipment does not operate normally by following the operating instructions, adjust only those controls that are covered by the operating instructions. Improper adjustment of other controls may result in damage to the unit.
E. If the equipment has been dropped or the casing Damaged.
F. When the equipment exhibits a distinct change in performance.

14. REPLACEMENT PARTS
When replacement parts are required, be sure the service technician uses replacement parts specified by the manufacturer or that have the same characteristics as the original part. Unauthorized substitutions may result in fire, electric shock, or other hazards.

15. SAFETY CHECK
Upon completion of any service or repairs to the equipment, ask the service technician to perform safety checks to verify that the equipment is in proper operating condition.

16. FIELD INSTALLATION
The installation of equipment should be made by a qualified service person and should conform to all local codes.

17. *CAUTION-these servicing instructions are for use by qualified service personnel only. to reduce the risk of electric shock do not perform any servicing other than that contained in the operating instructions unless you are qualified to do so.*

17-1 *Class 2 power source only.*

17-2 *Do NOT use power source other than that specified.*

INTRODUCTION

Features

All Models Feature:

- 1/3” Sony Super HAD™ II CCD
- 2.8-10.5mm Varifocal Day/Night Lens F1.4 DC Iris
- 600 TV lines of resolution
- Advanced Digital Noise Reduction (DNR)
- Shadow Reduction (ATR)
- Smart IR technology
- OSD menu control
- Privacy Masking / Motion Detection
- VIDEO OUT(BNC)
- Operates in 12VDC or 24VAC
- Test Monitor Output (RCA)
- 0 Lux with IR LED

DPD24DL

- Indoor Dome Model
- Camera Mounting: Surface / Flush mounting

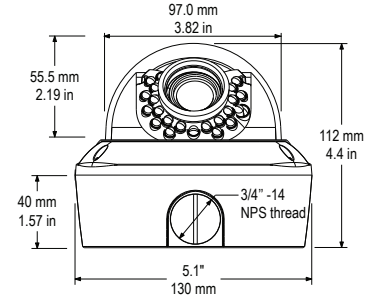
DPV24DL

- Vandal Dome Model
- Camera Mounting: Surface Mount

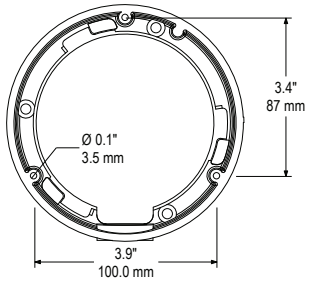
SPECIFICATIONS

General	DPD24DL / DPV24DL
Power source	DC 12V / AC 24V ±10%
Power consumption	3.0Watt Max
Image sensor	1/3” Sony Super HAD™ II CCD
Total pixels	811 (H) x 508 (V)
Scanning system	2:1 interlace
Scanning frequency	15.734KHz(H), 59.95Hz(V)
Sync.system	Internal / Line Lock
Resolution	600 TV Lines
Min.illumination	0 Lux IR LED On
Video output	1.0 Vp-p (75 ohm, composite)
S/N Ratio	more than 50dB (AGC OFF)
Power input	2-Pin terminal block (Detachable)
Video output	BNC Connector (2nd video RCA)
Lens mount	Fixed mount
Lens	2.8 - 10.5mm F1.4 Varifocal DC Auto iris
Operating temperature	-10~50°C
Operating humidity	0-99% (non-condensing)

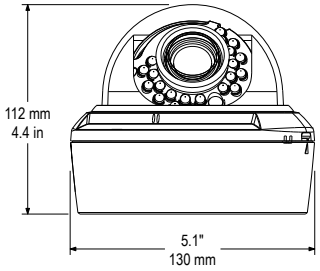
MEASUREMENTS



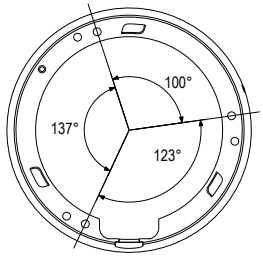
Vandal Dome Dimensions



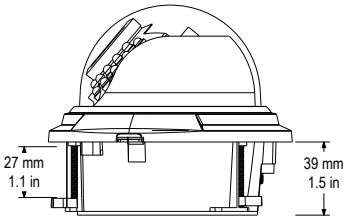
Base hole positions



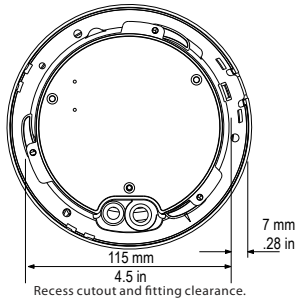
Indoor Dome Dimensions



Underside Base hole positions



Recess Mount Fitting dimensions



Recess cutout and fitting clearance.

PACKING CONTENTS

Indoor Dome package contains the following:

- Camera in housing ----------1
- Camera Locking screw (PA3 Type) ----------1
- Instruction guide (This Document)----------1
- Surface & Flush Mounting Templates----------2
- RCA - BNC test cable----------1
- Junction Box Plate----------1
- Mounting screw pack ----------1

Locking Screw | Conduit Key | Star Shape Key

Vandal Dome package contains the following:

- Camera in housing ----------1
- Camera Locking screw (PM4 Type)----------1
- Instruction guide (This Document)----------1
- Surface Mounting Template ----------1
- RCA - BNC test cable----------1
- Junction Box Plate----------1
- Mounting screw pack ----------1
- Star shape dome cover Tamper key ----------1
- Conduit Key ----------1

Mounting Screws Pack.
3pc 70mm / 2.8in Screws
3pc 30mm / 1.2in Screws
3pc 40mm 1.6in plugs

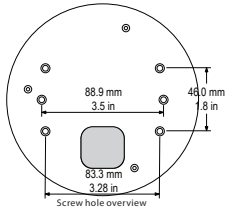
JUNCTION BOX PLATE

Junction box plate allows fitting of either Vandal dome or Indoor dome to standard 2S, 4S and Octagon junction boxes.

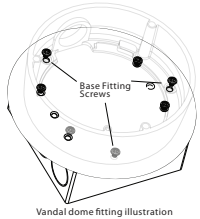
Junction Box fitting plate accessories:

- Junction Box Fiting plate ----------1
- 2S / 4S plate screws (KM3.5 Type) ----------4
- Octagon fitting screws (KM4 Type)----------2
- Base Fitting Screws PWM3 ----------3

Base Fitting Screw. | Octagon Screw | 2S / 4S Screw



Screw hole overview



Vandal dome fitting illustration

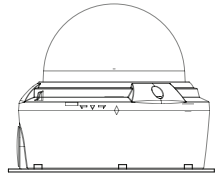
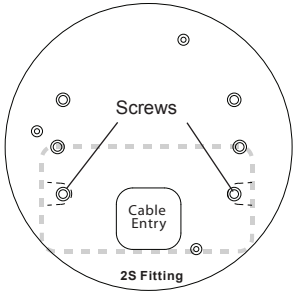


Plate fitting flush side to the junction box

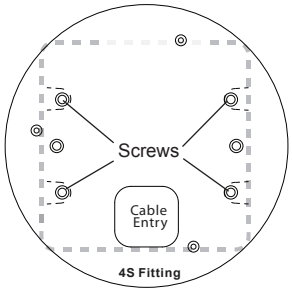
JUNCTION BOX INSTALLATION TYPES



a. 2S Fitting requires only 2pcs of base attachment screws.

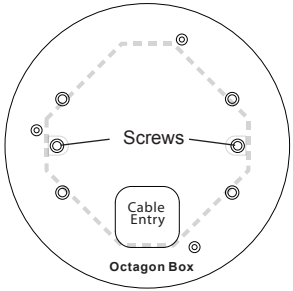
Note: You have a reduced space in which to hide cables using this type of installation. Recommended for indoor dome only.

Note: All plate fittings are put so screw holes show the countersunk cutouts. Camera base mount fits into the



a. 4S Fitting required 4pcs of base attachment screws.

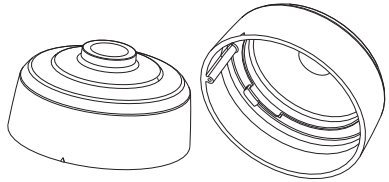
Note: A 4S junction box provides the most robust fitting of a camera to a junction box. Suitable for both indoor and vandal domes.



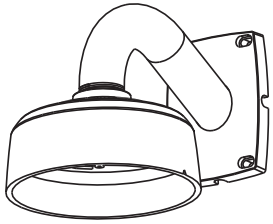
a. Octagon Box requires only 2pcs of base attachment screws.

Note Screws used for the octagon box are larger compared to those used for the 2S/4S (M4 type). Suitable for both indoor and vandal domes

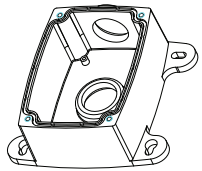
VANDAL DOME FITTINGS



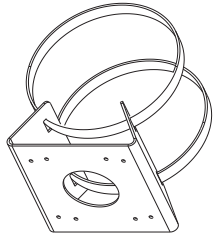
Pendant Cap - model # MNTV2XPC
Replaces the need for the camera base. Compatible with ceiling conduit installations



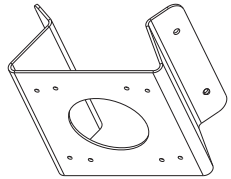
Wall Mount - model # MNTV2XW



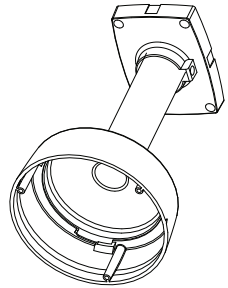
Junction Box Accessory - model # MNTV2XJ
Fits either wall mount and corner mount bracket. Symmetrical so reversible for top or bottom conduit.



Pole Mount - model # MNTV2XP

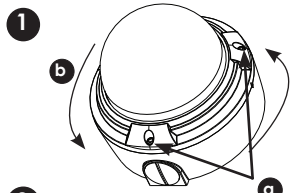


Corner Mount bracket - model # MNTV2XR
Can fit either Wall Bracket or Junction Box.



Pendant Mount - model # MNTV2XC

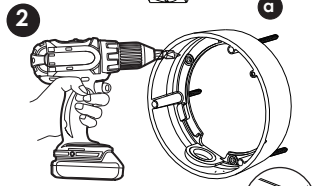
INSTALLATION. VANDAL DOME



a) Remove the three tamper screws using the Hex key provided.

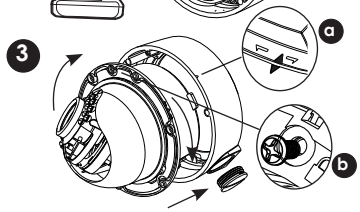
b) Use included mounting template to mark and pre-drill the required holes. Use included 2.8" screws to mount the camera directly to the mounting surface. Proceed to step 4

or Remove the camera base by unscrewing the base locking screw (indicated with a padlock marking) and turn camera module approx. 5 degrees counter-clockwise to detach camera base from the camera module. Proceed to step 3



a) Use the included surface mounting template or the base to mark and pre-drill all required holes. Attach camera base to mounting surface.

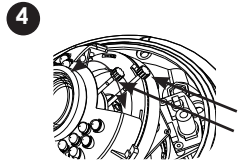
NOTE: If you plan on installing onto a junction box, attach provided mounting plate first to the junction box and then attach camera base to the mounting plate.



a) Reinsert camera module into camera base by ligning up the arrow notches, and turning camera module clockwise to lock into place.

b) Reinstall base locking screw as indicated by padlock mark to secure camera base to camera module.

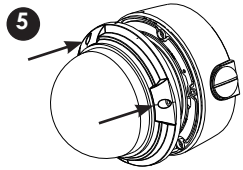
Note: If you plan to use conduit fitting, remove conduit cap using the conduit key.



a) Remove camera cover by squeezing the back and front of the cover as indicated by the "PRESS" indicators at the same time and lifting it up and away from the lens.

b) Insert the included video test cable into the RCA jack and connect to test monitor to set up camera. (see page 8)

c) Adjust camera viewing angle and secure into place by tightening thumb screw using a flat head screwdriver. Make lens and OSD adjustments as required. NOTE lens adjustment levers are by default in the locked position, turn counter clockwise to unlock.

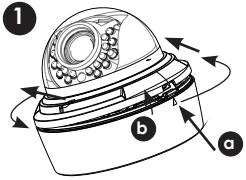


a) Re-attach the camera cover, using the locking nut as a guide, until it snaps into place.

b) Use the Hex key to tighten the tamper screws to create a proper weatherproof seal.

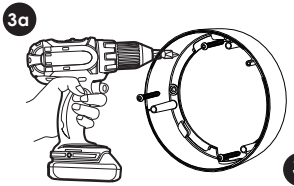
Note: Make sure dome cover cord attached to the camera module does not get caught in the rubber seal of dome.

INSTALLATION. INTERNAL DOME



a) Press down on the tab marked with an arrow to lift up the dome cover slightly

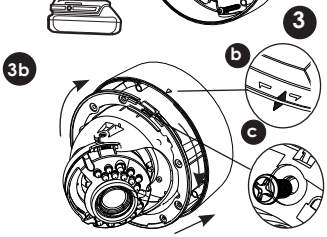
b) While pressing on tab, twist the dome cover anti-clockwise to release dome cover from back clips. Lift off the cover.



SURFACE MOUNT ONLY

a) Use included mounting template to mark and pre-drill the required holes. Use included 2.8" screws to mount the camera directly to the mounting surface. Proceed to step 5

OR Remove the camera base by unscrewing the base locking screw (indicated with a padlock marking) and turn camera module approx. 5 degrees counter-clockwise to detach camera base from the camera module.



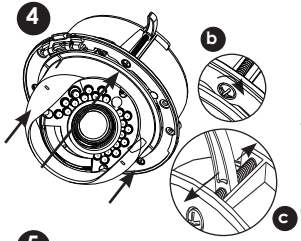
a) Use the included surface mounting template or the base to mark and pre-drill all required holes. Attach camera base to mounting surface.

NOTE: If you plan on installing onto a junction box, attach provided mounting plate first to the junction box and then attach camera base to the mounting plate.

b) Reinsert camera module into camera base by ligning up the arrow notches, and turning camera module clockwise to lock into place.

c) Reinstall base locking screw as indicated by padlock mark to secure camera base to camera module.

Skip step 4



FLUSH MOUNT ONLY

a) Cut flush mounting hole into surface using provided flush mounting template.

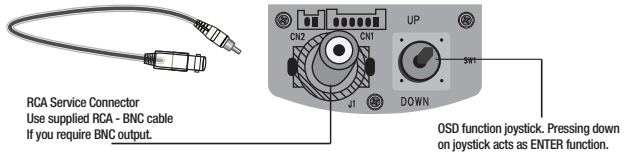
b) Insert dome into cutout and turn screwdriver clockwise to unlock the 3 mounting arms.

c) Continue turning clockwise to move mounting arms down until they make contact with inner mounting surface.

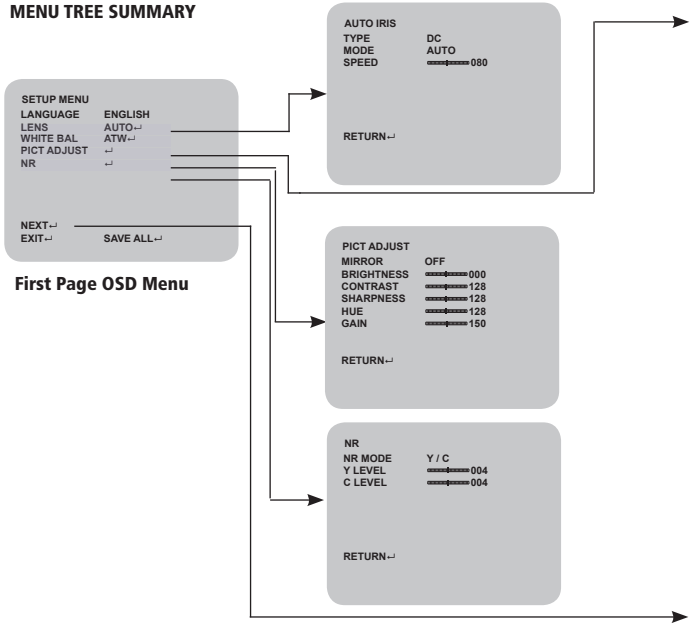
5 **Follow step 4 on page 6.**

6 a) Re-attach the camera cover, using the locking nut as a guide, until it snaps into place.

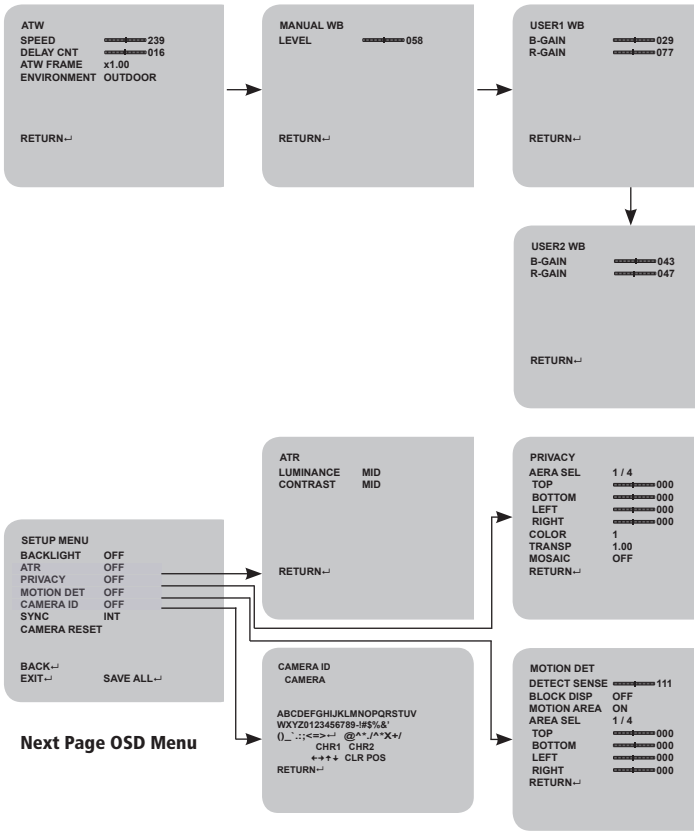
b) Reattach dome cover.



MENU TREE SUMMARY



First Page OSD Menu

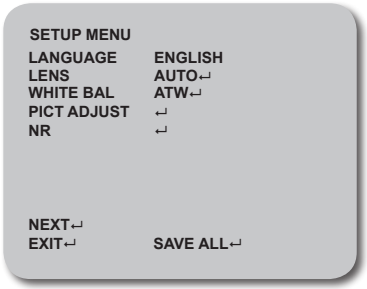


Next Page OSD Menu

OSD MENU control

Press down on the function joystick to access the setup menu.
• Main setup menu is displayed on the monitor screen.

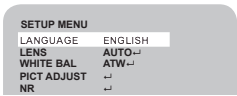
SETUP MENU



Select a function by moving the joystick up and down and move left or right to change setting value and press joystick to confirm selection.
If a menu option features a ↵ , a sub menu is available which can be accessed by pressing down on the joystick.
Select 'NEXT ↵' to view remainder of the OSD setup menu

Once finished updating settings, highlight 'EXIT' and press down on the joystick to exit setup menu.
To retain the changed settings after a power on/off of the camera you need to select **SAVE ALL** option on the menu.

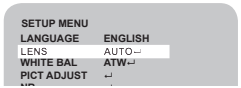
LANGUAGE



Select the language in which to display the OSD menu.
Note: Selection changes the language displayed immediatley.

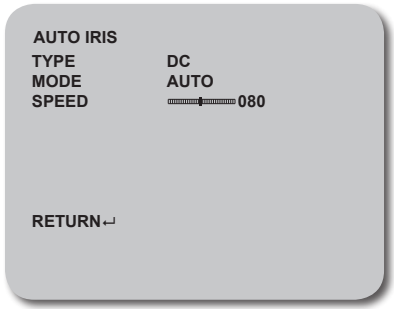
LANGUAGE: **English,Japanese,German, French Russian, Portuguese, Spanish, Chinese.**

LENS:



Changes the settings of the internal lens..

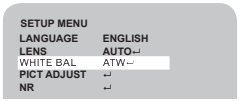
TYPE: **MANUAL,AUTO↵**



MODE: **AUTO,CLOSE,OPEN**
-AUTO: The mechanical iris is controlled automatically
-CLOSE: The mechanical iris is set to the closed position
-OPEN: The mechanical iris is set to the open position
Default setting is **Auto**

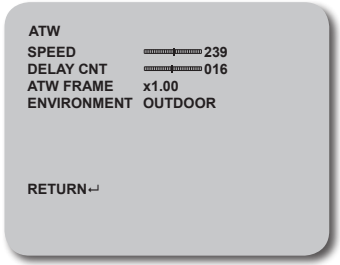
SPEED: **000-255**
Sets the convergence speed of the mechanical iris.
Default setting is **80**

WHITE BAL



White Balance can be set to following:
ATW / PUSH / USER1 / USER2 / ANTI CR / MANUAL / PUSH LOCK

- **ATW**



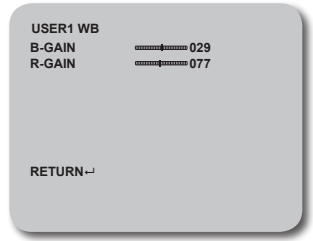
SPEED: 000-255 Specifies the AE control for ATW
Default setting is **239**

DELAY CNT: 000-255 Sets the time based of ATW change. Default setting is **16**

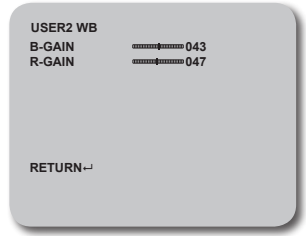
ATW FRAME: **x0.50 / x1.00 / x1.50 / x2.00**
Sets pull in frame for magnification
Default setting is **X1.00**

ENVIRONMENT: INDOOR / OUTDOOR
Set the pull in frame of ATW
Default setting is **OUTDOOR**

- **PUSH** Use white balance regardless of the subject conditions.
- **USER1** User defined gain adjustment on B and R

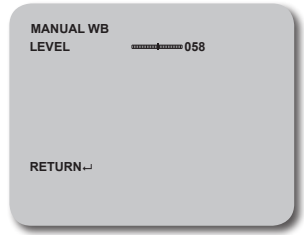


- **USER2** User defined gain adjustment on B and R



B-GAIN: 000-255 B Gain adjustment for WB
R-GAIN: 000-255 R Gain adjustment for WB

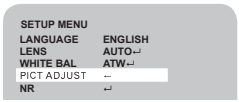
- **ANTI CR** Activates color rolling suppression.
- **MANUAL ATW**



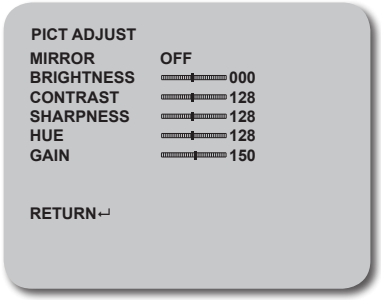
LEVEL: 000-255
Specifies the R and B gain values for manual WB.
The actual variable range is limited to the range from the low color temperature (approx. 1800K) to the high color temperature (approx. 10500K).
Default setting is **58**

- **PUSH LOCK** Press down on joystick to set current scene as the white balance level. Use a grey card in front of lens to give a nutural white level.

PICT ADJUST

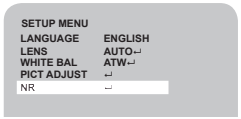


Picture and display control settings



- **MIRROR:** **ON / OFF** Horizontally flip the display output.
- **BRIGHTNESS:** **000-255** Screen brightness.
- **CONTRAST:** **000-255** Screen contrast.
- **SHARPNESS:** **000-255** Screen sharpness.
- **HUE:** **000-255** Adjust the hue.
- **GAIN:** **000-255** Adjust the gain.

NR



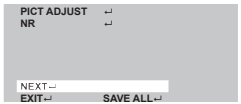
Digital Noise Reduction.
This function reduces the background noise in a low luminance environment.

NR MODE: "Y/C" / "OFF" / "Y" / "C"
Noise reduction Filter mode.

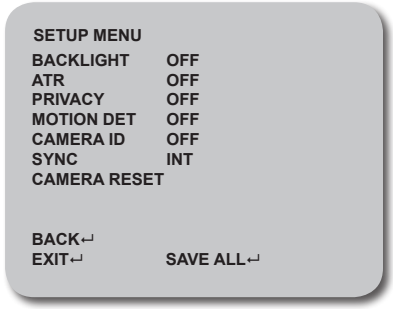
Y LEVEL: 000-015
Adjustment of the Y filter strength.
Default setting is **4**

C LEVEL: 000-015
Adjustment of the C filter strength.
Default setting is **4**

NEXT↵



From the main setup menu select NEXT ↵ to enter second page of main setup menu.



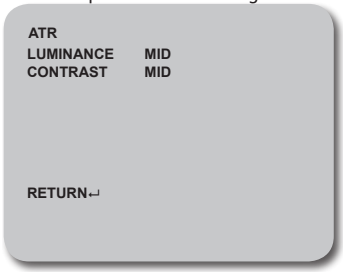
BACKLIGHT **OFF / BLC / HLC**

-**OFF** Backlight compensation OFF
-**BLC** Backlight compensation ON
-**HLC** High light compensation ON

SHADOW REDUCTION (ATR)

OFF / ON↵

This function compensates for darker areas surrounding the object to provide naturally sharp picture and improves contrast in bright/dark areas.

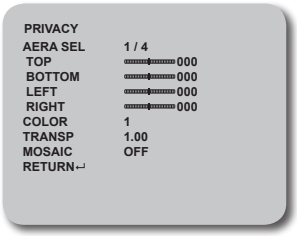


- LUMINANCE — Sets the extent of the luminance compression (MID/HIGH/LOW)
- CONTRAST — Sets the extent of the contrast enhancement (MID/MIDHIGH/HIGH/LOW/MIDLOW)

PRIVACY

OFF / ON↵

Hide an area so that it is not displayed on the monitor.



AREA SEL: Selects the mask frame to be adjusted.

TOP: Sets the top side of the mask frame selected by the AREA SEL parameter

BOTTOM: Sets the bottom side of the mask frame selected by the AREA SEL parameter.

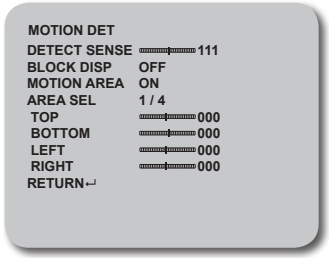
LEFT: Sets the left side of the mask frame selected by the AREA SEL parameter.

RIGHT: Sets the right side of the mask frame selected by the AREA SEL parameter

COLOR: Sets the colors of the mask frames
TRANSP: Sets the transparency ratio of the mask frames.
MOSAIC: Sets the mask frame mosaic to ON or OFF

MOTION DET OFF / ON↵

Motion Detection is defined by rectangular areas. This give a visual identification of motion areas.



DETECT SENSE: Sets the motion detection sensitivity

BLOCK DISP: ON/OFF/ENABLE status of the motion detection block display.
ON: Make motion areas visible, OFF: Hide motion areas
ENABLE↵ Press enter to access the "dead band setting" screen, on-screen cursor moves in response to the inputs Left, Right, Up and Down to set the sensing area, or dead band for specified blocks. This allows you to specify and set an area of motion which is not rectangular in shape.
Press and hold SET button 3 seconds to exit.

MOTION AREA: ON / OFF Enable / Disable Area No.

AREA SEL: 1/4 / 2/4 / 3/4 / 4/4. Selects motion area number.

TOP: Set the top side of the monitoring frame selected by the AREA SEL parameter.

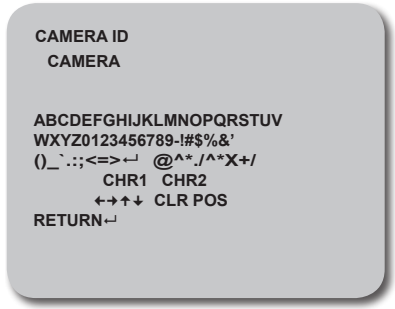
BOTTOM: Set the bottom side of the monitoring frame selected by the AREA SEL parameter

LEFT: Set the left side of the monitoring frame selected by the AREA SEL parameter.

RIGHT: Sets the right side of the monitoring frame selected by the AREA SEL parameter

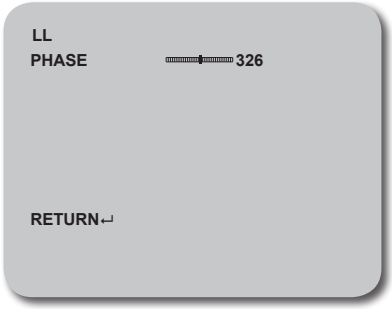
CAMERA ID OFF / ON↵

Camera ID shows a name on the screen as chosen.



Use Up/Down/Left/Right to move around. CHR1/2 changes the selection fonts to alternative selection, CLR will clear info. POS allows position change.

CAMERA ADJUSTMENT



SYNC **INT / LL ↵**
Video synchronization displayed
INT(Internal) or LL (Line Lock)
Note: Shows **INT** with DC only model.
And **LL** setting for camera model
when connected to a AC supply.

PHASE: 000-524
Adjust the phase in the vertical direction when the line lock mode is available.

- **CAMERA RESET** ↵
  This will reset all settings for all menus to manufacturer defaults. This allow you to return to shipped settings from the manufacturer.

EXIT / SAVE ALL

- **EXIT** Exit OSD menu.
- **SAVE ALL** Saves the settings to camera

TROUBLE SHOOTING

Refer to the following table if you are experiencing trouble with your camera. Contact an authorized technician if the table does not provide you with a solution to the trouble.

- **Nothing appears on the screen.**
  Check that the power cord and line connection between the camera and monitor are connected properly.
  Check that you have properly connected VIDEO cable to the camera VIDEO output jack.
- **The image on the screen is dim.**
  Is lens stained with dirt? Clean lens with soft, clean cloth.
  Adjust the monitor contrast & brightness controls
  Re-position the camera if necessary.
- **The image on the screen is dark.**
  Adjust the contrast feature of the monitor.
  If you have an intermediate device, set the 75Ω / Hi-z properly.
- **The camera is not working properly, and the surface of the camera is hot.**
  Check that you have properly connected the camera to an appropriate power source.
- **IR LED's don't appear to be working (not glowing red in the dark)**
  Ensure that the power provided to the camera at the camera end meets the power consumption requirements as per the camera specifications.
- **The Motion Detection function does not work.**
  Check that MOTION DET in SETUP 2 menu is 'ON' for the selected area.
  Enable Block display ON will show a visual indication on the display output for the detected areas.
- **Color is not correct.**
  Check the setting of WHITE BAL SETUP menu.
  Under certain incandescent lighting,some color shifting may take place.
  This is normal due to sensitivity to IR light

- **When the resistance value of copper wire is at [20˚C(68˚F)]**

Copper wire size (AWG)	#24(0.22mm²)	#22(0.33mm²)	#20(0.52mm²)	#18(0.83mm²)
Resistance (Ω/m)	0.078	0.050	0.030	0.018
Voltage Drop (V/m)	0.028	0.018	0.011	0.006

As shown in the table above, voltage decreases as the wire gets longer. Therefore use of an excessively long adaptor output line for connection to the camera may affect the performance of the camera.

*Standard voltage for camera operation : AC 24V ±10% or DC 12V ±10%
*There may be some deviation in voltage drop depending on the type of wire and the manufacturer.

Notes

- **Be sure to connect power only after all the installation is complete.**
- **Use the UL listed, CLASS 2 power transformer for AC24v adaptor.**